

Composite resins: why not?

Resinas compostas: por que não?

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ABSTRACT

Direct and indirect restorative techniques have shown clinical longevity. However, composite resins allow the achievement of highly aesthetic treatments and are low-cost procedures with minimal or no wear and are easy to repair. The purpose of this manuscript is stimulate a reflection among readers, avoiding either influences by fads or immediacy or by the social media, remaining firm in the purpose of promoting health respecting the maximum preservation of the dental structure, mainly in young patients. The present article describes the use of composite resin in five clinical cases, demonstrating that direct composite resin restorations should be the treatment of choice to save sound dental structure in addition to a low cost and aesthetic results.

Keywords: composite resins, ceramics, operative dentistry.

RESUMO

As técnicas restauradoras diretas e indiretas têm demonstrado longevidade clínica. No entanto, as resinas compostas permitem a realização de tratamentos altamente estéticos e são procedimentos de baixo custo, com mínimo ou nenhum desgaste da estrutura dental e de fácil reparo. O objetivo deste manuscrito é estimular a reflexão entre os leitores, evitando influências de modismos ou imediatismo ou das mídias sociais, mantendo-se firme no propósito de promover a saúde respeitando a máxima preservação da estrutura dental, principalmente em pacientes jovens. O presente artigo descreve o uso de resina composta em cinco casos clínicos, demonstrando que as restaurações diretas de resina composta devem ser o tratamento de escolha para preservar a estrutura dental hígida, além de baixo custo e resultados estéticos.

Palavras-chave: resinas compostas, cerâmicas, dentística.

1 TECHNICAL REPORTS

Ceramic veneers have been described in the literature since the 1980s as refined solution for anterior teeth with compromised aesthetics [1-3]. Studies show that the material has clinical longevity and maintenance of periodontal health when the technique is well performed [4-7]. However, these indirect restorations require irreversible wear on the dental structure in order to prepare the substrate to fit the material [8].

In regard to the protocols for the use of composite resins, it is possible to achieve clinical longevity and satisfactory aesthetic results reducing the amount of healthy dental structure removal. One of the main advantages of this material includes the possibility of repairing failures at a relatively low cost [9-11]. In addition, composite resin allows the accomplish of a fast, highly aesthetic treatment with the ability to mask darkened substrates even with a small thickness of material [12].

Perhaps the major limitation of composite resins is the possible chromatic change over time. This change can be due to factors inherent to the material and its chemistry, as some amines can oxidize with the aging of the material. In addition, since the material has an organic matrix, it undergoes textural changes allowing pigments from the oral cavity to be incorporated, whether from the patient's diet or poor hygiene [13,14]. However, the surface and marginal changes of the composite resin can be surpassed with a new surface polishing without the need for complete removal of the material [15].

After ten years, vitreous restorations show better clinical behavior than polymeric restorations, both in quality and in longevity [16]. However, ceramics can also fail over time, undergoing fractures that require partial replacement or a more complex repair than that performed for direct restorations, in addition to color change as the resin cement used for bonding the material may be subjected to color change, compromising the aesthetic aspect of the rehabilitation treatment [17, 18].

In order to have clinical longevity of restorative treatments, some aspects are mandatory, such as: correct case planning, preservation of sound dental structure, adequate selection of material and operative technique, effective finishing and polishing, as well as planning for the continuous follow-up of these restorations are necessary [19]. Due to the fact that ceramic and composite resin restorations had a similar clinical

longevity in the first years, composites can be considered as the material of first choice in young patients where the indication exceeds the characteristics of the materials themselves [20].

In cases 1 and 2 (Figures 1 and 2), patients had an absence of an upper central incisor, an unusual condition [21], but with a correct repositioning of the upper lateral incisor they could be re-anatomized and promote aesthetic smile harmony only with strategic additions of composite resin. In case 1 (Figure 1), there was a need for gingival recontouring to align with adjacent central incisor and after removing the pre-existing restorative. It was possible to reestablish the aesthetics and function of this dental element. In case 2 (Figure 2), the dental element 12 was re-anatomized in the same way, in addition to strategic additions to teeth 21 and 22 in order to promote greater smile harmony.

Figure 1. a): Initial aspect: Lateral incisor positioned in place of the absent central with poor restoration and gingival contour in disharmony with an inflammatory response. b) Gingival recontouring and removal of restorative material. c) Rubber dam isolation with clamp B4 stabilized with compound. d) Final result of composite resin restoration after 15 days.



Figure 2. a) Initial aspect: Absence of right central incisor (11), enlarged lateral incisor (12), left central and lateral incisors (21 and 22) with chipped edges and staining (21). b) Rubber isolation dam and acid etching of the teeth. c) Re-anatomization (12) and filling of the incisal edges (21 and 22) and the buccal surface (21). d) Final aspect of the restorative procedure creating an aesthetic harmony.



The use of composite resins is also indicated for closing diastemas, both for cases of adding restorative material only in the mesial portion of the upper central incisors (Figure 3), as well as in more complex situations that require a repositioning of the dental elements. As demonstrated in case 4 (Figure 4), the patient did not wish to undergo orthodontic treatment and for this reason orthodontic rubbers were used for 48 hours in order to promote a better distribution of the interdental spaces, enabling the construction of a smile that combines aesthetics and function, by adding material in the four upper incisors.

Figure 3. a) Initial aspect: Presence of diastema. b) Roughening of the surface with a diamond tip. c) Restoration of one tooth each time, taking measurements with a dry point compass. d) Final aspect of the restoration.

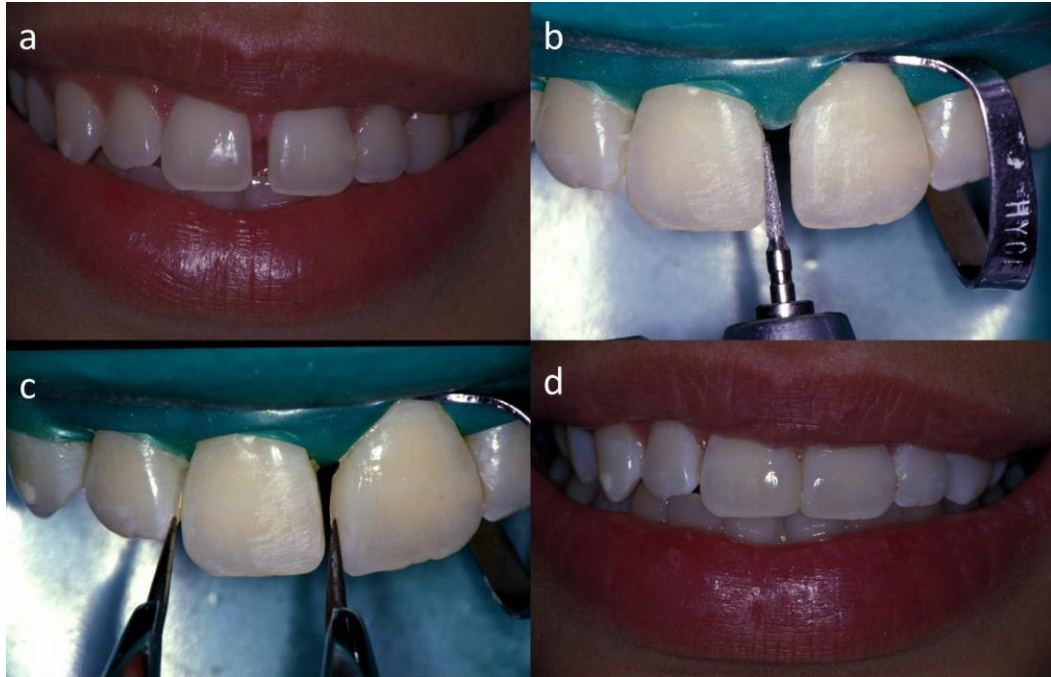
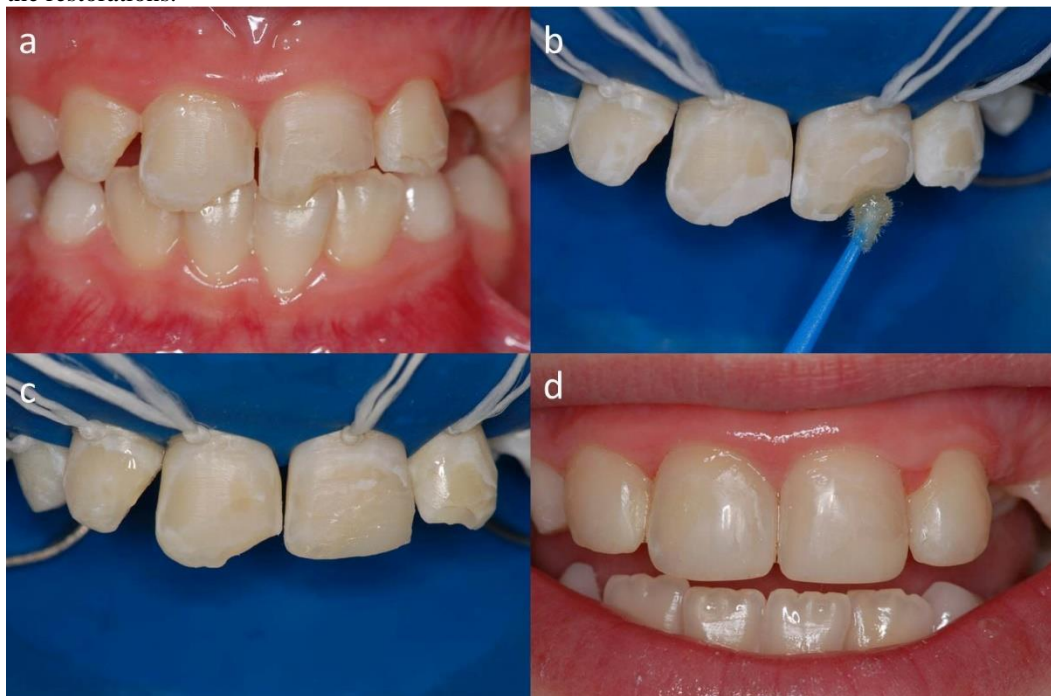


Figure 4. a) Initial aspect: The patient does not want to undergo orthodontic treatment. The only complaint is the presence of diastemas between teeth 11 and 21. b) Composite resin buttons on teeth 11 and 21 with a rubber band to reduce the space between the upper central incisors and opening diastema towards the lateral incisors. c) Use of rubbers for 48 hours for a better distribution of the spaces. d) Composite restorations on the mesial surfaces of teeth 12, 11, 21 and 22 and on the distal face of teeth 12 and 22, reducing diastemas and maintaining the size ratio between teeth.



The fracture of the upper incisors is prevalent in the age group where case 5 was performed [22]. In this case, after the preparation of the dental structure, with additions of composite resin restricted only to the fracture areas, it was possible to recover the aesthetic harmony of the smile (Figure 5). In this case, mainly due to the patient's young age, it is of extreme importance to maintain the maximum health of the dental structure and execution of a careful restorative technique, which is possible through the performance of a restorative protocol with composite resins in order to reduce the repetitive restorative cycle.

Figure 5.a) Initial aspect: Fracture of the upper incisors. b) Rubber dam isolation, preparation of the structures, acid conditioning and the adhesive system. c) Strategic increments of composite resin. d) Final result of the restorations.



It's known that any restorative technique may be more demanding than others in one or another issue. Direct adhesive restorations require an adjusted protocol, that must be followed. Because the thickness of the material may be very thin in some areas, chipping or fracture may occur, however this is inherent to maximum preservation of the sound structure and easy repaired.

In the present manuscript, authors illustrate the use of this material in different clinical situations to encourage the use of composite resin, especially in young patients. The performance of composite resin restorations allows the resolution of cases with minimal or no wear of the dental structure, besides being a low-cost option promoting aesthetic results.

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